

AN ANNOTATED REVIEW OF THE EVIDENCE BASE
FOR PSYCHOSOCIAL AND PSYCHOPHARMACOLOGICAL INTERVENTIONS FOR
CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER,
MAJOR DEPRESSIVE DISORDER, DISRUPTIVE BEHAVIOR DISORDERS, ANXIETY DISORDERS,
AND POSTTRAUMATIC STRESS DISORDER

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Acronym Key

ADHD	attention-deficit/hyperactivity disorder
CBCL	Child Behavior Checklist
CBT	cognitive behavior therapy
CD	conduct disorder
DK	don't know
MST	multisystemic therapy
ODD	oppositional defiant disorder
PTSD	posttraumatic stress disorder
RCT	randomized clinical trial
SED	severe emotional disorder

Introduction

The Duke University team was invited by the National Institute of Drug Abuse (NIDA) to prepare an annotated bibliography on the evidence base for treatments of selected childhood mental disorders. The intent of this review was two-fold: (1) to identify efficacious/effective interventions for the treatment of childhood psychiatric disorders which could potentially reduce the risk for substance abuse disorders in adolescence or young adulthood; and (2) to identify recent intervention studies that merit follow-up research to examine outcomes relative to their impact on subsequent substance use, abuse, or dependence in adolescence and beyond. This review is in response to interest by NIDA, and the field, in whether early treatment of childhood mental disorders can prevent later substance abuse problems.

To achieve the above aims, NIDA provided a list of childhood mental health disorders that may be linked to later substance abuse: (1) attention-deficit/hyperactivity disorder; (2) major depression; (3) disruptive behavior disorders; (4) anxiety disorders; and (5) posttraumatic stress disorder. Although

classified as an anxiety disorder, PTSD was reviewed separately.

Literature searches were conducted on treatments for each of the above disorders or related symptoms. Eligible studies were identified primarily through searches of the Medline and PsycINFO databases. To be included in this review a study had to: (1) focus on one of the above childhood mental health disorders or related symptoms; (2) be a controlled design, either a randomized clinical trial (RCT), a quasi-experimental design, within-subject cross-over design, or a multiple baseline design; (3) target children in the 6 – 12 age range, although studies which extended the age range to also include younger or older youth were not excluded; and (4) be published between 1985 to 1999, although some earlier studies were included if more recent research on a promising intervention had not been conducted. Variations in these inclusion criteria are delineated in the overview section for each disorder. An important caveat is that treatment studies which addressed multiple or unspecified disorders were not included because of the focus on diagnostic-specific interventions. The review focused on outpatient care;

therefore, studies of residential or institutional treatment (e.g., treatment foster care, group homes, residential treatment centers, and hospitals) were not included.

Matrices for each disorder (Tables 1 – 5) include the following topic headings: study design/description, target population, demographic characteristics, outcomes, and comments. Within each matrix, studies have been organized into three sections: psychosocial, psychopharmacological, and adjunctive (psychosocial plus psychopharmacological) interventions.

A summary of the treatment research for each disorder or related symptoms identified above is presented briefly in the following text and annotated specific studies are included in the matrices. The evidence base here does not appear to be as strong as what was reported in the Report of the Surgeon General on Mental Health (DHHS, 1999; see also Burns, Hoagwood, & Mrazek, 1999; Weisz & Jensen, 1999). This is because the treatment studies of adolescents were included there and not here. A link between interventions for the selected mental disorders and substance abuse outcomes was not found in most of the studies presented here. This is not unexpected due the age 12 cut-off, which is younger than when most substance use or abuse begins. Two further and related issues

emerge: (1) measures of substance use are not commonly included in treatment studies of mental disorders in children; and (2) most treatment studies do not follow children into adolescence where the risk for substance use is greater and detection of substance problems (or the lack thereof) could be identified. An exception with respect to measures of substance use and long-term follow-up is the research on multisystemic therapy for disruptive behavior disorders.

This review shows that within the existing evidence base for each disorder, psychosocial interventions include an array of behavioral approaches. The psychopharmacology evidence base is clearly strongest for ADHD, weaker for other disorders, and virtually nonexistent for anxiety disorders and PTSD (with the exception of obsessive-compulsive disorder). Adjunctive studies examining psychosocial and psychopharmacological interventions were rare, with the largest and most sophisticated for ADHD.

This review and bibliography provide a considerable, but brief, collection of information in a single document on the status of controlled treatment research for selected disorders. The matrices can be quickly scanned to obtain details about specific studies (e.g., sample size, gender, and racial/ethnic distribution, and outcomes). Therefore, each matrix provides a starting point for determining known benefits of a specified intervention for a

given disorder which may be useful for identifying interventions with the potential for preventing later substance use problems. Moreover, the matrices offer a way to identify successful interventions which have been tested in reasonably large and well-conducted studies. These interventions might be candidates for assessing substance abuse outcomes *via* follow-up studies as participants age into adolescence or young adulthood. Substance abuse outcome comparisons for youth in experimental and control conditions could then be done.

An additional comment and caveat is related to the question of what constitutes evidence. In preparing this report, careful attention was given to study selection and accurate abstraction. However, it is possible that relevant studies may have been missed. In addition, clarification about what works will require application of standards to the existing evidence base. Standards of evidence such as those developed by the Society of Clinical Psychology (Lonigan, Elbert, & Johnson, 1998) may require, for example, multiple trials of an intervention, findings reported by multiple teams of investigators, etc., before an intervention can be added to the evidence base.

In conclusion, for policymakers and investigators to utilize the information in this report for decision-making about further research, multiple issues will require attention. In addition to

establishing criteria to assess the adequacy of the evidence base for specific disorders, the utility of these studies for specific target populations (e.g., age, gender, racial/ethnic groups) will require consideration. This is particularly an issue where the representation of such groups has not been addressed in the existing literature. In addition, further understanding of risk factors and prevention strategies for substance use problems will also be required to address decisions about future research on mental health interventions.

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Studies of Childhood Attention-Deficit/Hyperactivity Disorder

A review of the literature was conducted to identify empirical, peer-reviewed studies of psychosocial and pharmacological treatments of children with attention-deficit/hyperactivity disorder (ADHD). Due to the disproportionately large number of treatment outcome studies of childhood ADHD relative to other childhood mental health disorders, a more selective selection process was used to locate studies appropriate for this review. Systematic computerized literature searches were conducted on PsycINFO and Medline databases, with keywords attention deficit disorder (PsycINFO) and attention deficit disorder with hyperactivity (Medline). The large number of references that resulted from the keyword search was reduced to include only those studies that: (1) were identified in the electronic databases by one or more of the following study descriptors: treatment outcome study, controlled clinical trial, or randomized controlled trial; (2) included subjects between the ages of 6 and 12 as the primary treatment target population, although studies that included adolescents as well were not excluded; (3) were published between 1985 and 1999; and (4) were written in the English language. Reference lists

from review articles and book chapters were not included in the search. This search strategy yielded 132 empirical peer-reviewed studies that focused on the treatment of children with ADHD. Of these 132 studies, 54 studies were excluded for the following reasons: ADHD was a secondary rather than a primary diagnosis ($n = 12$); the study focus was other than treatment outcome (e.g., predictors of treatment adherence, profile of medication side effects, etc.; $n = 24$); and finally, subjects were not randomly assigned to treatment conditions ($n = 18$). The remaining 78 studies was reduced further by excluding pharmacological studies in which the sample size was less than 30 children ($n = 47$). The "greater than 30" sample size criterion was not applied to psychosocial or adjunctive treatments due to the limited number of these studies. This process identified 31 peer reviewed treatment outcome studies of children with ADHD. These 31 studies are presented and described in Table 1. A reference list of the excluded small n psychopharmacological studies is included in the reference section.

Attention-deficit/hyperactivity disorder (ADHD) is perhaps the most researched disorder in child mental health, with

pharmacological interventions, psychosocial interventions, and adjunctive or multimodal interventions widely investigated.

Pharmacological treatments for ADHD have been well documented. Psychostimulant medications, including methylphenidate (Ritalin), dextroamphetamine (Dexedrine and Adderal®), and pemoline (Cylert) have been found to be quite effective short-term treatments for symptoms of ADHD. Psychostimulant medications have been shown to have their greatest effect on core symptoms (e.g., hyperactivity, impulsivity, and inattention) and associated features (e.g., defiance, aggression, and oppositionality) of ADHD. Small treatment effects have been reported for learning, school achievement, and cognitive tasks. Side effects of stimulant medications are a common concern for children and parents, but findings indicate that most side effects are mild, decrease over time, and are dose dependent.

Behavioral training for parents and teachers and classroom contingency management are the primary psychosocial treatments investigated with children with ADHD. Individual psychosocial treatments, including cognitive behavior therapy, cognitive training, and social skills training have been less efficacious. While psychosocial treatments do not appear to achieve improvements as substantial as those found with

stimulant medication, they have been found useful in changing parenting and teacher practices.

Adjunctive interventions are treatments that include both pharmacological and psychosocial modalities across multiple settings. Studies assessing the combined impact of cognitive training and stimulant medication have found little incremental benefit over medication alone. The most recent and largest adjunctive study to date, the Multimodal Treatment Study of Children with ADHD (the MTA) has shown that combined treatment was not superior to well-delivered and well-monitored psychostimulant medication at reducing the core symptoms of ADHD. However, combined treatment outcomes were achieved with lower medication doses. Combined treatment was also superior at reducing associated features of ADHD, including defiance, aggression, oppositionality, internalizing symptoms, and parent-child relationships.

Table 1.1 Psychosocial Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Fehlings, Roberts, Humphries, & Dawe, 1991	RCT; 12-sessions individual child CBT and 8-sessions parent CBT ($n = 13$) vs. child and parent supportive therapy control ($n = 13$)	Community referred children with ADHD; subjects selected on the basis of structured parent clinical interview, parent ratings, and psychometric testing	Age: 7 – 13 Gender: 70% boys 30% girls Race/Ethnicity: 96% White 4% African American	Significant improvement on measures of parent perception of child hyperactivity and child self-esteem; no between-group differences on other outcome measures	Hyperactivity appeared to respond to CBT more than did inattentiveness and impulsivity; small sample size
Horn, Ialongo, Greenberg, Packard, & Smith-Winberry, 1990	RCT; 12-week behavioral parent training ($n = 12$) vs. self-control instruction ($n = 12$) vs. combination ($n = 11$)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview, parent ratings, and teacher ratings	Age: 7 – 11 Gender: 81% boys 19% girls Race/Ethnicity: 86% White 10% African American 4% Other	Combined treatment produced significantly more responders than either treatment modality alone; combined group showed significantly more improvement in self-concept scores; all treatments showed significant reductions in classroom behavioral problems	Treatment gains in classroom behavioral problems were not maintained at 8-month follow-up; small sample size
Linden, Habib, & Radojevic, 1996	RCT; 40 45-min sessions of EEG biofeedback training ($n = 9$) vs. wait-list control ($n = 9$)	Outpatient children with ADD/ADHD; subjects selected on the basis of unstructured parent clinical interview, parent ratings, teacher ratings, and intelligence and achievement testing	Age: 5 – 15 Gender: DK Race/Ethnicity: DK	Positive treatment effect was obtained on measures of intellectual functioning, inattention, and hyperactivity; no between-group differences on measures of aggression/defiance	No control for contact time; parents were not blind to treatment condition; no follow-up data
Long, Rickert, & Ashcraft, 1993	RCT; bibliotherapy ($n = 17$) vs. treatment as usual ($n = 15$)	Outpatient children with ADHD and positive response to methylphenidate; subjects selected on the basis of pediatrician diagnosis	Age: 6 – 11 Gender: 81% boys 19% girls Race/Ethnicity: DK	Significant improvement in parental knowledge of behavioral principles related to child behavior; significant decrease in intensity of behavioral problems at home and school	No standard diagnostic criteria; no follow-up data

Table 1.1: Psychosocial Studies of Childhood ADHD

Study Citation(s)	Study Design/Description	Target Population	Demographics Characteristics	Outcomes	Notes
Pfiffner & Mc Burnett, 1997	RCT; 8-session social skills training with parent-mediated generalization (<i>n</i> = 9) vs. child-only social skills training (<i>n</i> = 9) vs. wait-list control (<i>n</i> = 9)	Community referred children with ADHD; subjects selected on the basis of semistructured parent clinical interview and parent ratings	Age: 8 – 10 Gender: 70% boys 30% girls Race/Ethnicity: 96% White 4% African American	Relative to wait-list control, significant improvement was obtained in both treatment groups for parent report of social skills and disruptive behavior; no differences between treatment groups was observed	Treatment gains maintained at 4-month follow-up; minimal generalization of newly acquired social skills to school setting
Pisterman, McGrath, Firestone, Goodman, Webster, & Mallory, 1989	Randomized multiple baseline between-groups design; 12-session immediate group parent training (<i>n</i> = 23) vs. 12-session delayed group parent training (<i>n</i> = 23)	Outpatient preschool children with ADDH; subjects selected on the basis of structured parent clinical interview, and parent ratings	Age: 3 – 6 Gender: 100% boys Race/Ethnicity: 94% White 6% African American	Positive treatment effect was obtained on measures of compliance, parental style of interaction, and behavioral management skills	Treatment gains were maintained at 3-month follow-up; no evidence of generalization of treatment effects beyond laboratory setting
Schmidt, Mocks, Lay, Eisert, Fojkar, Fritz-Sigmund, Marcus, & Musaeus, 1997	Double-blind, placebo-controlled, within-subject crossover experimental design; oligoantigenic diet vs. control diet vs. methylphenidate (<i>n</i> = 49)	Inpatient children with diagnosis of ADHD and/or conduct disorder; subjects selected on the basis of psychiatric interview	Age: 6 – 12 Gender: 96% boys 4% girls Race/Ethnicity: DK	Change in behavior was measured by trained raters; oligoantigenic diet showed modest benefit; 24% of children showed improvement in two behavior ratings during oligoantigenic diet relative to control diet; methylphenidate resulted in 44% more responders relative to oligoantigenic diet	Restricted sample; no follow-up data

Table 1.2 Psychopharmacological Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Biederman, Baldessarini, Wright, Knee, & Harmatz, 1989	Double-blind, placebo-controlled RCT; 6-week desipramine hydrochloride ($n = 31$) vs. placebo ($n = 31$)	Community referred children with ADHD; subjects selected on the basis of structured parent clinical interview and parent ratings	Age: 6 – 17 Gender: 93% boys 7% girls Race/Ethnicity: 93% White 7% Other	Significant improvement in symptoms characteristic of ADHD was obtained on clinician, parent, and teacher ratings; no between-group differences on cognitive measures	Findings were similar for adolescents; short-term efficacy only; medication was well-tolerated; no follow-up
Buitelaar, van der Gaag, Swaab-Barneveld, & Kuiper, 1996	Double-blind, placebo-controlled, within-subject crossover experimental design; 4-week methylphenidate ($n = 46$)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview, parent ratings, teacher ratings, and psychometric testing	Age: 6 – 13 Gender: 89% boys 11% girls Race/Ethnicity: DK	Positive treatment effect was obtained on ratings of behavior at school and at home; predictors of improvement were high IQ, severe inattentiveness, young age, low severity, and low anxiety; a positive response to a single dose predicted response at week 4	Treatment normalized behavior at school and home in 17% of subjects; treatment change measured by questionnaires only; no follow-up data
Buitelaar, van der Gaag, Swaab-Barneveld, & Kuiper, 1995	Double-blind, placebo-controlled, within-subject cross-over experimental design; 4-week pindolol vs. 4-week methylphenidate vs. 4-week placebo ($n = 52$)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview, parent ratings, teacher ratings, and psychometric testing	Age: 7 – 13 Gender: 88% boys 12% girls Race/Ethnicity: DK	Overall, pindolol was moderately effective relative to methylphenidate; pindolol was equally effective on measures of hyperactivity and conduct problems at home and hyperactivity problems at school, but less effective on measures of conduct problems at school	Pindolol side-effects caused significantly greater distress in children and parents relative to methylphenidate; used fixed dosing; no follow-up data

Table 1.2 Psychopharmacological Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Conners, Casat, Gualtieri, Weller, Reader, Reiss, Weller, Khayrallah, & Ascher, 1996	Double-blind, placebo-controlled RCT; 6-week bupropion hydrochloride ($n = 72$) vs. placebo ($n = 37$)	Children with ADHD; subjects selected on the basis unstructured parent clinical interview, parent ratings, and teacher ratings	Age: 6 – 12 Gender: 90% boys 10% girls Race/Ethnicity: 75% White 24% Other	Positive treatment effect was obtained on teacher ratings of aggression and hyperactivity at school; parents also reported symptom reduction but of less magnitude; clinician ratings of global improvement varied greatly by site with no overall treatment effect when averaged	Positive treatment effect was obtained on short-term memory and continuous performance tests; no follow-up data
Gadow, Nolan, Sparfkin, & Sverd, 1995; Gadow, Sverd, Sprafkin, Nolan, & Grossman, 1999	Double-blind, placebo-controlled, within-subject crossover experimental design; 8-week methylphenidate ($n = 34$)	School children with ADHD and comorbid tic disorder; subjects selected on the basis of parent clinical interview, parent ratings, and teacher ratings	Age: 6 – 11 Gender: 91% boys 9% girls Race/Ethnicity: 86% White 10% African American 4% Other	Treatment resulted in significant reduction in hyperactive, disruptive, and aggressive behavior in school setting; treatment effect was observed across all three doses of methylphenidate (0.1, 0.3, and 0.5 mg/kg); a clinically insignificant but statistically significant exacerbation of motor tics in classroom setting was observed	No nonresponders; follow-up data at 6 month intervals for 2 years revealed continuing overall improvement in symptoms characteristic of ADHD and no exacerbation of either motor or vocal tics
Gillberg, Melander, von Knorring, Janols, Thernlund, Hägglöf, Eidevall-Wallin, Gustafsson, & Kopp, 1997	Double-blind, placebo-controlled RCT; 15-month amphetamine sulfate ($n = 32$) vs. placebo ($n = 30$)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview	Age: 6 – 11 Gender: 84% boys 16% girls Race/Ethnicity: 100% White (Swedish)	Positive outcomes obtained on measures of behavioral abnormality by parents and teachers; trend for positive outcome on measures of learning	Significant attrition in placebo group (73%); adverse side effects were few and mild

Table 1.2 Psychopharmacological Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Manos, Short, Findling, & 1999	Double-blind titration, placebo-controlled quasi-experimental design; 4-week 2 daily doses of methylphenidate ($n = 42$) vs. single dose of Adderall® ($n = 42$)	Outpatient children with ADHD; subjects selected on the basis of structured parent clinical interview, parent ratings, and teacher ratings	Age: 5 – 17 Gender: 79% boys 21% girls Race/Ethnicity: 93% White 5% African American 2% Hispanic	Although a significant dose effect was observed for both medications, no differences were observed on parent and teacher ratings	Subjects were not randomly assigned to treatment conditions; no follow-up data
Nolan & Gadow, 1997	Double-blind, placebo-controlled, within-subject crossover experimental design; evaluated the extent to which 8-week methylphenidate ($n = 34$) normalizes behavior and indirectly influences the behavior of peers	Community referred children with ADHD and chronic tic disorder; subjects selected on the basis of parent clinical interview, parent ratings, and teacher ratings	Age: 6 – 11 Gender: 91% boys 9% girls Race/Ethnicity: 86% White 10% African American 4% Other	Treatment result in significant behavioral improvement but complete behavioral normalization was not achieved in many of the children (68%)	Little evidence that peer behavior improved as a function of subject medication dose; treatment response of subjects with ADHD and tics is similar to samples of children with ADHD alone
Rapport, Denney, DuPaul, & Gardner, 1994	Double-blind, placebo-controlled, within-subject crossover experimental design; 6-weeks methylphenidate at 4 doses (5 mg, 10 mg, 15 mg, and 20 mg; $n = 76$)	Community referred children with ADHD; subjects selected on the basis semistructured parent interview, parent ratings, and teacher ratings	Age: 6 – 11 Gender: 86% boys; 14% girls Race/Ethnicity: 100% White	The dose-response effect on classroom behavior was predominately linear; a large proportion of children showed normalization of sustained attention (72%) and classroom functioning (78%) and a large proportion showed no improvement in academic functioning (47%)	None
Schachar, Tannock, Cunningham, & Corkum, 1997	RCT; 4-month methylphenidate ($n = 46$) vs. placebo ($n = 45$)	Outpatient children with ADHD; subjects selected on the basis of semi-structured parent clinical interview, parent ratings, and teacher ratings	Age: 6 – 12 Gender: DK Race/Ethnicity: DK	Positive outcomes obtained on teacher ratings of core symptoms of ADHD (inattention, hyperactivity-impulsiveness); no between-group differences on measures of symptom improvement in parent ratings of home behavior	Treatment gains on teacher ratings were maintained over 4-months; no evidence of relapse during 4-month treatment; subjects in placebo condition also showed some improvement; 10% of the treatment group discontinued treatment due to negative side effects

Table 1.2 Psychopharmacological Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Sprafkin & Gadow, 1996	Quasi-experimental between-group design; methylphenidate subjects in a controlled research protocol ($n = 33$) vs. methylphenidate subjects in a community based clinic ($n = 43$); evaluated the extent to which assessment procedures influences treatment response	Community referred children with ADD/ADHD; subjects selected on the basis of unstructured parent clinical interview, parent ratings, and teacher ratings	Age: 4 – 13 Gender: 99% boys; 1% girls Race/Ethnicity: 84% White 8% African American 8% Other	Analyses of teacher ratings revealed no between-group differences; the pattern of treatment response was also similar within treatment groups	Subjects were not randomly assigned; groups were also not equivalent in age, special education status, level of aggression, and tic status
Swanson, Wigal, Greenhill, Browne, Waslik, Lerner, Williams, Flynn, Agler, Crowley, Fineberg, Baren, & Cantwell, 1998	Double-blind, placebo-controlled, within-subject crossover design; 7-week safety and efficacy study of Adderall® ($n = 30$)	Community referred children with ADHD and positive treatment response to methylphenidate; subjects selected on the basis of a structured parent clinical interview, parent ratings, and psychometric testing	Age: 7 – 14 Gender: 79% boys; 31% girls Race/Ethnicity: DK	Objective (written school work) and subjective (teacher ratings) measures revealed significant treatment effects; no unusual or serious side effects were noted	The use of an analogue classroom raises questions of ecological validity
Zeiner, Bryhn, Bjercke, Truyen, & Strand, 1999	Double-blind, placebo-controlled, within-subject crossover experimental design; 7-week methylphenidate ($n = 36$)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview, parent ratings, and neuropsychological testing	Age: 7 – 11 Gender: 100% boys Race/Ethnicity: DK	Positive treatment effect was obtained on behavioral measures of hyperactivity and defiance at home and school; neuropsychological tests showed positive treatment effect for sustained attention, the ability to process complex information, and motor coordination	No follow-up data

Table 1.3 Adjunctive Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Abikoff & Gittelman, 1985	RCT; 16-week cognitive training plus medication ($n = 21$) vs. attention control plus medication ($n = 14$) vs. medication alone ($n = 15$); at 4-week follow-up the medication alone and attention control groups were switched to placebo ($n = 29$) and cognitive training group was randomized to continued medication ($n = 10$) or placebo ($n = 10$)	Community referred children with ADHD, cross-situational hyperactivity who required maintenance methylphenidate, dextroamphetamine, or pemoline; subjects selected on the basis of referral, parent ratings, and psychometric testing	Age: 6 – 17 Gender: 90% boys 10% girls Race/Ethnicity: DK	Cognitive training did not result in improved behavioral, academic, or cognitive functioning relative to the other two treatment groups; cognitive training did not facilitate withdrawal of medication	During placebo substitution phase, both cognitive training and attention control children were more disruptive than those children who had received medication alone; most children required remediation following placebo substitution
Abikoff, Ganeles, Reiter, Blum, Foley, & Klein, 1988	RCT; 16-week cognitive training plus medication ($n = 11$) vs. remedial tutoring plus medication ($n = 10$) vs. medication alone ($n = 13$)	Community referred children with ADHD, with academic deficiency and positive treatment response to stimulant medication (methylphenidate or dextroamphetamine); subjects selected on the basis of unstructured parent clinical interview, parent ratings, and teacher ratings	Age: 7 – 12 Gender: 100% boys Race/Ethnicity: 76% White 21% African American 3% Hispanic	Results showed no significant improvement in academic performance, self-esteem, or perceptions of academic functioning due to cognitive training	At 6-month follow-up, children in the cognitive training group were rated as more improved in math and reading by teachers; however, this finding did not coincide with changes in achievement tests; small sample size
Brown, Borden, Wynne, Schleser, & Clingerman, 1986	2 x 2 double-blind, placebo-controlled RCT; methylphenidate and attentional control ($n = 8$) vs. cognitive training and placebo ($n = 10$) vs. methylphenidate and cognitive training ($n = 9$) vs. attentional control and placebo ($n = 8$)	Community referred children with ADD; subjects selected on the basis of structured and unstructured parent clinical interviews	Age: 5 – 13 Gender: 80% boys 20% girls Race/Ethnicity: DK	No significant improvement in characteristic symptoms of ADD across the four treatment groups	Medication was discontinued prior to post-testing; did not include dropouts in analyses; questionable power due to small sample size; no follow-up data

Table 1.3 Adjunctive Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Brown, Wynne, Borden, Clingerman, Geniesse, & Spunt, 1986	2 x 2 double-blind, placebo-controlled RCT; 3-month methylphenidate & attention control (<i>n</i> = 7) vs. cognitive therapy & placebo (<i>n</i> = 10) vs. methylphenidate & cognitive therapy (<i>n</i> = 9) vs. attention control & placebo (<i>n</i> = 7)	Outpatient children with ADD; subjects selected on the basis of diagnosis by referring physician, parent ratings, and teacher ratings	Age: 5 – 13 Gender: 85% boys 15% girls Race/Ethnicity: DK	The adjunctive use of cognitive therapy failed to help maintain treatment gains following discontinuation of medication	Questionable power due to small due to small sample size; no follow-up data
Horn, Ialongo, Pascoe, Greenberg, Packard, Lopez, Wagner, & Puttler, 1991; Ialongo, Horn, Pascoe, Greenberg, Packard, Lopez, Wagner, & Puttler, 1993	2 x 3 double-blind, placebo-controlled RCT; 3 levels of medication: placebo, low-dose methylphenidate, or high-dose methylphenidate; levels of psychosocial intervention: 12-week behavioral parent training, 12-week self-control training, or no behavioral intervention; <i>n</i> = 16 subjects assigned to each of the 6 treatment conditions	Outpatient children with ADHD (50% comorbid with either CD or OD); subjects selected on the basis of unstructured parent clinical interview, parent ratings, teacher ratings, and psychometric testing	Age: 7 – 11 Gender: 77% boys 23% girls Race/Ethnicity: 85% White 9% African American 4% Hispanic 2% Asian American	The combination of medication and behavioral intervention did not improve outcomes over high-dose medication alone; low-dose in combination with behavioral intervention was significantly more effective than low-dose alone and as effective as high-dose alone on teacher ratings	9-month follow-up failed to reveal positive outcomes for combined psychosocial intervention; results suggest that treatment benefits dissipate when medication is withdrawn
Klein & Abikoff, 1997	RCT; 8-week behavior therapy and placebo (<i>n</i> = 28) vs. methylphenidate alone (<i>n</i> = 29) vs. behavior therapy and methylphenidate (<i>n</i> = 29)	Outpatient children with ADHD; subjects selected on the basis of parent clinical interview and parent ratings	Age: 6 – 12 Gender: 94% boys 6% girls Race/Ethnicity: 83% White 14% African American 2% Hispanic 1% Asian	The combination of behavior therapy and methylphenidate was the most effective treatment; methylphenidate alone was next most effective treatment; behavior therapy alone was least effective	The behavioral treatment program was comprehensive and intensive, which may limit its feasibility

Table 1.3 Adjunctive Studies of Childhood Attention-Deficit/Hyperactivity Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Pelham, Carlson, Sams, Vallano, Dixon, & Hoza, 1993	Within-subjects alternating treatments design; behavior modification <i>vs.</i> no behavior modification and high dose methylphenidate <i>vs.</i> low dose methylphenidate <i>vs.</i> placebo (<i>n</i> = 31)	Day treatment children with ADHD; subjects selected on the basis of parent structured interview, parent ratings, and teacher ratings	Age: 5 – 9 Gender: 100% boys Race/Ethnicity: 94% White 6% African American	Significant main effect for both interventions alone, with the effect size of methylphenidate twice that of behavior modification; little was gained by the higher dose of methylphenidate or behavior modification over the effects of the low dose methylphenidate	No follow-up data; study limited to classroom behavior
The Multimodal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder Cooperative Group, 1999	RCT; 14-month medication management (<i>n</i> = 144) <i>vs.</i> behavioral treatment (<i>n</i> = 144) <i>vs.</i> combined treatment (<i>n</i> = 145) <i>vs.</i> 14-month community care (<i>n</i> = 146); the behavior treatment consisted of parent training (27 group and 8 individual sessions), child-focused treatment (8-week summer treatment program) and a school-based intervention (10-16 teacher consultation sessions and 12-weeks of a behaviorally trained aid working with the child)	Community referred children with ADHD; subjects selected on the basis of a structured clinical interview, parent ratings, and teacher ratings	Age: 7 – 9 Gender: 80% boys 20% girls Race/Ethnicity: 71% White 20% African American 8% Other	All treatments showed improvement in ADHD symptoms; combined treatment showed no added benefit to medication management alone in reducing core symptoms of ADHD; combined treatment was superior to other treatments in several non-ADHD domains (oppositional/aggressive symptoms) and positive functioning outcomes (parent-child relations)	Largest and best designed study to date of treatments for children with ADHD; subjects were selected with a wide range of comorbid conditions and demographic characteristics representative of patients seen in clinical practice; improvements in combined treatment were achieved at lower doses

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Studies of Childhood Depression

A review of the literature was conducted to identify empirical studies of psychosocial and pharmacological treatments of children with depression. This review was conducted in two stages. First, systematic computerized literature searches were conducted on PsycINFO and Medline databases, with keywords depression and major depression. The resulting list of references was reduced to include only those studies that: (1) were identified in the electronic database by one or more of the following study descriptors: treatment outcome study, clinical trial, controlled clinical trial, or randomized controlled trial; (2) included subjects between the ages of 6 and 12 as the primary treatment target population, although studies that included younger children and adolescents were not excluded; (3) were published between 1985 and 1999; and (4) were published in the English language. Second, reference lists obtained from review articles and book chapters were searched to ensure that all of the relevant studies had been identified. This search strategy resulted in 28 potential studies. This list was further reduced by excluding studies for the following reasons: depression was a secondary comorbid diagnosis (e.g., mentally retarded children,

socially anxious children, medically ill children; $n = 4$); the study focus was other than treatment outcome (e.g., effects of extended evaluation on symptoms of depression, factors related to correspondence to teacher and child ratings, information processing in recovered depressed children; $n = 4$); or subjects were not randomly assigned to treatment conditions ($n = 1$). This process identified 19 peer-reviewed controlled studies of children with either depression or depressive symptoms. These studies are presented and described in Table 2.

Perhaps the most striking conclusion that can be drawn from the current review of empirical studies of childhood depression is the relative paucity of well-controlled outcome studies with this population. Psychosocial and pharmacological interventions are the two primary treatment modalities that have been studied. The psychosocial interventions investigated include individual and group cognitive behavior therapy, self-control training, and problem-solving and social skills training. The pharmacological interventions include tricyclic antidepressants (imipramine, nortriptyline), selective serotonin reuptake inhibitors (fluoxetine),

and phenethylamine monoamine reuptake inhibitors (venlafaxine).

Generally, it can be concluded that both cognitive behavior therapy and self-control therapy are efficacious treatments for children with symptoms of depression. However, with few exceptions, the inclusion criteria for psychosocial treatments were based on depressive symptoms rather than a diagnosis of depression, and treatments usually occurred in school settings with an average of 12 sessions. Few of these studies reported follow-up data. In the few studies reporting longitudinal data, treatment gains were maintained at follow-up.

Research addressing the efficacy of tricyclic antidepressants for the treatment of childhood depression failed to find superiority for its use over placebo. Thus, there is no evidence to suggest

that tricyclic antidepressants should be used in the treatment of children with depression. However, studies investigating the effectiveness of selective serotonin reuptake inhibitors are promising. One recent double-blind, placebo-controlled study of fluoxetine for childhood depression reported significant treatment effects relative to placebo. A second new generation antidepressant venlafaxine (a phenethylamine monoamine reuptake inhibitor) has not been found beneficial for this population. Well designed studies regarding the safety, efficacy, and long-term use of antidepressant medication need to be conducted before strong statements can be made regarding their overall efficacy in the treatment of childhood depression.

Table 2.1 Psychosocial Studies of Childhood Depression

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Butler, Mieztis, Friedman, & Cole, 1980	Quasi-experimental design; 10 session school-based group treatment for depression; role-playing (<i>n</i> = 14) vs. cognitive restructuring (<i>n</i> = 14) vs. attention-placebo (<i>n</i> = 13) vs. classroom control (<i>n</i> = 14)	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report and teacher referral	Age: 11 – 12 Gender: 63% boys 37% girls Race/Ethnicity: DK	Role-playing and cognitive restructuring groups showed most improvement	No follow-up data; method of assignment to groups unspecified; no standard diagnostic criteria
Jaycox, Reivich, Gillham, & Seligman, 1994; Gillham, Reivich, Jaycox, & Seligman, 1995	Quasi-experimental design; 12 session school-based group treatment; cognitive training and social problem-solving (<i>n</i> = 69) vs. wait-list and no participation control (<i>n</i> = 74)	Non-diagnosed school children identified as at-risk (current level of depressive symptoms and parental conflict) on the basis of self-report measures	Age: 10 – 13 Gender: 54% boys 46% girls Race/Ethnicity: 83% White 11% African American 6% Other	Treatment group showed significant decrease in and prevention of depressive symptoms relative to control group; no between-group differences in internalizing and externalizing behavioral problems and explanatory style	Treatment gains maintained at 6-month follow-up; treatment effects grew larger at 2-year follow-up; no standard diagnostic criteria
Kahn, Kehle, Jenson, & Clark, 1990	RCT; 12 session school-based group treatment; cognitive-behavioral therapy (<i>n</i> = 17) vs. relaxation training (<i>n</i> = 17) vs. self-modeling treatment (<i>n</i> = 17) vs. wait-list control	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report measures and structured clinical interview	Age: 10 – 14 Gender: 48% boys 52% girls Race/Ethnicity: DK	All active treatment conditions showed decrease in depressive symptoms and increase in self-esteem relative to wait-list control	Treatment effects maintained at 4-week follow-up; subjects in cognitive-behavioral group showed most improvement; subjects in self-modeling group more likely to relapse; small sample size

Table 2.1 Psychosocial Treatments of Childhood Depression

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Liddle & Spence, 1990	RCT; 8 session school-based group treatment; social competence training ($n = 11$) vs. attention placebo ($n = 10$) vs. wait-list control ($n = 10$)	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report measures and nonstandardized clinical interview	Age: 7 – 11 Gender: 68% boys 32% girls Race/Ethnicity: DK	All groups showed decrease in depressive symptoms; no significant between-group differences	Treatment effects maintained at 8-week follow-up; no standard diagnostic criteria; small sample size
Stark, Reynolds, & Kaslow, 1987	RCT; 12 session school-based group treatment; self-control training ($n = 9$) vs. behavioral problem-solving ($n = 10$) vs. wait-list control ($n = 9$)	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report measures and semi-structured interview	Age: 9 – 12 Gender: 57% boys 43% girls Race/Ethnicity: DK	Both active treatments showed significant improvement relative to wait-list control	Treatment effects maintained at 8-week follow-up; small sample size; no standard diagnostic criteria
Stark, Rouse, & Livingston, 1991	RCT; 24-26 session school-based group and home treatment; cognitive-behavioral group treatment ($n = 12$) vs. traditional group counseling ($n = 12$)	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report measures	Age: 9 – 13 Gender: DK Race/Ethnicity: DK	Within-group analyses showed a reduction in depressive symptoms in both treatment groups; between-group analyses showed that cognitive-behavioral group was superior to traditional group counseling	No between-group differences at 7-month follow-up; no standard diagnostic criteria

Table 2.1 Psychosocial Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Vostanis, Feehan, Grattan, & Bickerton, 1996; Vostanis, Feehan, Grattan, & Bickerton, 1996; Vostanis, Feehan, & Grattan, 1998	RCT; 9 session outpatient clinic based individual treatment; cognitive-behavioral ($n = 29$) vs. non-focused intervention ($n = 28$)	Inpatient depressed children; subjects selected on the basis of self-report measures and semi-structured interview	Age: 8 – 17 Gender: 44% boys 56% girls Race/Ethnicity: 88% White 9% Asian 3% African American	Both groups showed decrease in depressive symptoms and improvement in social functioning	Treatment gains for both groups were maintained at 9 month and two year follow-up; same therapists presented both treatments; no measure of treatment adherence
Weisz, Thurber, Sweeney, Proffitt, & LeGagnoux, 1997	RCT; 8 session school-based group treatment; cognitive-behavioral treatment ($n = 16$) vs. no treatment control ($n = 32$)	Non-diagnosed school children with mild to moderate depressive symptoms; subjects selected on the basis of self-report measures and semi-structured interview	Age: 8 – 12 Gender: 54% boys 46% girls Race/Ethnicity: 63% White 37% African American	Treatment group showed significant decrease in depressive symptoms relative to no treatment control	Treatment effects maintained at 9-month follow-up; small sample size; no attention placebo control group
Wood, Harrington, & Moore, 1996	RCT; Outpatient clinic based individual treatment; cognitive-behavioral treatment ($n = 24$) vs. relaxation training control ($n = 24$)	Outpatient depressed children; subjects selected on the basis of standardized semi-structured interview	Age: 9 – 17 Gender: 31% boys 69% girls Race/Ethnicity: DK	Treatment group showed significant decrease in depressive symptoms relative to relaxation training control; no between-group differences on measures of anxiety and conduct symptoms	Between-group differences were smaller at 3-month follow-up; groups did not differ at 6-month follow-up

Table 2.2 Psychopharmacological Treatments of Childhood Depression

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Emslie, Rush, Weinberg, Kowatch, Hughes, Carmody, & Rintelmann, 1997; Emslie, Rush, Weinberg, Kowatch, Carmody, & Mayes, 1998	Double-blind, placebo-controlled RCT; 8-week fluoxetine ($n = 48$) vs. placebo ($n = 48$)	Outpatient depressed children and adolescents; subjects selected on the basis of standardized semi-structured interview	Age: 7 – 17 Gender: 54% boys 46% girls Race/Ethnicity: 73% White 27% Other	Significant decrease in depressive symptoms for fluoxetine vs. placebo; differences were evident at week 5	Between-group differences were less evident on self-report measures
Geller, Cooper, McCombs, Graham, & Wells, 1989	Double-blind, placebo-controlled RCT; 8-week nortriptyline ($n = 26$) vs. placebo ($n = 24$)	Outpatient depressed children; subjects selected on the basis of standardized semi-structured interview	Age: 5 – 12 Gender: 70% boys 30% girls Race/Ethnicity: 90% White 10% Other	No significance difference in response rate between nortriptyline and placebo groups	No follow-up data; small sample size
Hughes, Preskorn, Weller, Weller, Hassanein, & Tucker, 1990	Double-blind, placebo-controlled RCT; 6-week imipramine in children with pure depression or depression plus anxiety ($n = 14$) vs. children with depression plus conduct/oppositional disorder ($n = 17$) vs. placebo	Inpatient depressed children with comorbid anxiety or conduct/oppositional disorder; subjects selected on the basis of consensus diagnosis using self-report measures and a semi-structured interview	Age: 6 – 12 Gender: DK Race/Ethnicity: DK	Both depression groups improved; higher placebo response rate among depressed children with conduct/oppositional disorder	No follow-up; small sample size
Mandoki, Tapia, Tapia, Sumner, & Parker, 1997	Double-blind, placebo-controlled RCT; 6-week venlafaxine and psychotherapy ($n = 16$) vs. placebo and psychotherapy ($n = 17$)	Outpatient depressed children and adolescents; subjects selected on the basis of clinician interview	Age: 8 – 18 Gender: 25% boys 75% girls Race/Ethnicity: DK	No significance difference in response rate between the two treatment groups	No follow-up data; no standard diagnostic criteria; small sample size

Table 2.1 Psychosocial Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Preskorn, Weller, Hughes, Weller, & Bolte, 1987	Double-blind, placebo-controlled RCT; 6-week imipramine ($n = 10$) vs. placebo ($n = 12$)	Inpatient depressed children; subjects selected on the basis of unstructured and standardized clinical interviews	Age: 6 – 12 Gender: DK Race/Ethnicity: DK	Significant reduction in depressive symptoms for imipramine group relative to placebo group	Treatment effect detected within 3 weeks of starting drug therapy; no follow-up data; small sample size
Puig-Antich, Perel, Lupatkin, Chambers, Tabrizi, King, Goetz, Davies, & Stiller, 1987	Double-blind, placebo-controlled RCT; 5-week imipramine ($n = 16$) vs. placebo ($n = 22$)	Outpatient depressed children; subjects selected on the basis of standardized semi-structured interview	Age: $M = 9.11$, $SD = 1.43$ Gender: 61% boys 39% girls Race/Ethnicity: 42% White 37% African American 21% Hispanic	No significance difference in response rate between imipramine and placebo groups	Study terminated early due to imipramine nonresponse; high placebo response rate; small sample size

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Studies of Childhood Depression

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Table 2.1 Psychosocial Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Vostanis, P., Feehan, C., Grattan, E., & Bickerton, W.-L. (1996).	Treatment for children and adolescents with depression: Lessons from a controlled trial.				
Vostanis, P., Feehan, C., Grattan, E., & Bickerton, W. L. (1996).	A randomised controlled out-patient trial of cognitive-behavioural treatment for children and adolescents with depression: 9-month follow-up.				
Vostanis, P., Feehan, C., & Grattan, E. (1998).	Two-year outcome of children treated for depression.				
					Weisz, J. R., Thurber, C. A., Sweeney, L., Proffitt, V. D., & LeGagnoux, G. L. (1997). Brief treatment of mild-to-moderate child depression using primary and secondary control enhancement training. <i>Journal of Consulting and Clinical Psychology, 65</i> , 703-7.
					Wood, A., Harrington, R., & Moore, A. (1996). Controlled trial of a brief cognitive-behavioural intervention in adolescent patients with depressive disorders. <i>Journal of Child Psychology and Psychiatry and Allied Disciplines, 37</i> , 737-46.

Studies of Childhood Disruptive Behavior Disorders

The evidence base for non-residential interventions for disruptive behavior disorders is presented in Table 3. It excludes interventions that require an out-of-home placement (e.g., therapeutic foster care, group homes, residential treatment centers, or hospitalization).

Interventions must be applicable to school age pre-adolescent youth (defined as approximately 6 – 12). Studies were included if they covered this age range, but also included youth who were younger or older. Interventions that are designed exclusively for adolescents were not included. The review includes prevention and treatment studies. Therefore, programs that identify youth who are “at risk” for developing conduct problems are included. Studies in which ADHD was the primary diagnostic label were excluded (and are included in the ADHD section of this report). Studies could be included if they focused on youth with a definable psychiatric diagnosis (e.g., conduct disorder, oppositional defiant disorder) or on youth with externalizing behaviors that may contribute to these types of disorders. The review includes a number of interventions designed to be delivered *via* schools. However, we did not search

the education literature for education-specific interventions (e.g., special education).

Searches were conducted in PsycINFO and Medline electronic databases, beginning with key words “behavior disorders,” “conduct disorder,” or “disruptive.” The query was limited to (1) refereed journal articles, (2) English language, (3) 1985-1999, (4) school age (6 – 12), and (5) empirical studies. This net was intended to be broad to prevent omission of relevant articles. This search resulted in 314 articles. The final set was selected by reading abstracts or articles. Articles were excluded if they: had a total sample size of less than 30; did not include a comparison group; did not include youth younger than 13; were focused on program descriptions or epidemiologic topics; or had insufficient data to examine outcomes at the completion of intervention. In addition to this search, we also included older citations from the frequently cited review by Brestan and Eyberg (1998) of the literature on treating disruptive disorders. This resulted in a total of 30 included articles.

Brestan and Eyberg’s review summarized research through 1995. This review has been cited extensively in many recent

publications related to treatment for disruptive behaviors. The current review extends, rather than duplicates, the Brestan and Eyberg article.

Results from the present review are discussed within five heuristic categories: parent training; community-based interventions; clinic-based treatments; prevention programs; and psychopharmacological treatments. These categories were developed to provide structure in a field with quite diverse approaches to intervention. In contrast to the research literature for other disorders in this review, adjunctive studies examining combined psychosocial and pharmacological interventions were not found.

Parent training is highlighted because it is a generic heading that captures both of the “well established” treatments identified by Brestan and Eyberg. Support seems to be particularly strong for Webster-Stratton’s Parents and Children Series. Most of the research on this intervention has been conducted with parents of youth in the pre-school and early school years.

Community-based interventions primarily include treatments that are delivered in the child and family’s natural ecology and that focus on meeting the individualized needs of youth and their families. Multisystemic therapy has the strongest evidence base within this section. However, most studies of MST have focused

on adolescents, rather than youth under the age of 13. Various approaches to case management appear to have positive effects, particularly on treatment-related outcomes but large direct effects on symptoms have not been found.

Clinic-based interventions included a heterogeneous set of individual and family-based interventions. Overall, this set of interventions showed improvements over time for youth. However, differential improvement between groups was not always significant. This section provides findings that suggest possible effectiveness of several interventions (e.g., day treatment, Problem Solving combined with Parent Management Training, Family Effectiveness Training). However, the research base is not particularly strong.

Preventive interventions are unique within this review. This is in part because the risk factors for disruptive disorders have been consistently determined, and therefore, prevention programs have been developed to reduce the probability of later problems in at-risk youth. All interventions in this section include a multi-faceted intervention that targets the multiple risk factors for the development of disruptive disorders. An intervention conducted by Tremblay, Vitaro, and colleagues has the longest follow-up data, and results look promising into early adolescence and beyond. Two of the projects included here are recent

additions (e.g., Fast Track, LIFT). Initial outcomes from these projects look promising, but more time is needed to assess their long-term effects.

Pharmacological interventions are relatively rare with disruptive disorders (except for youth with comorbid ADHD). Recent studies suggest potentially positive effects of lithium and methylphenidate hydrochloride. In both cases, the evidence is not yet extensive.

Overall, interventions for disruptive disorders tend to focus on the child's behavior and significant others (particularly parents). There is some evidence for the effectiveness of a

variety of approaches. There is also growing evidence for the effectiveness of multi-faceted prevention programs to prevent development of disorder in at-risk youth. In the treatment of disruptive disorders, 6 – 12 year olds are a relatively understudied population. More attention has been given to youth who are younger (e.g., preschoolers) or older (e.g., adolescence). There is a tremendous need for additional research to build upon the positive interventions listed here and to examine long-term effectiveness.

Table 3.1 Review of Childhood Disruptive Behavior Disorders Studies					
Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Brestan & Eyberg, 1998	<p>Review of 82 studies conducted across 29 years (1966-1995)</p> <p>Included studies based on previous meta-analyses plus additional search for studies during 1993-95; criteria for inclusion: prospective design, peer-reviewed journals; 99% of included studies used a comparison group, 75% used random assignment</p>	Youth with symptoms of ODD or CD; included comorbid cases	Not reported in all studies; typical subject was 9 years old, white, lower-middle income	Identified 2 well-established treatments, and 10 probably efficacious treatments; well-established are both Parent Training (Patterson & Gullion's <i>Living with Children</i> ; Webster-Stratton's videotape Parent Training series); probably efficacious include anger control, assertiveness training, parent-child interaction, parent training, problem solving, rational-emotive therapy, delinquency prevention, and multisystemic therapy	Not a primary research article, but included here because it forms the basis for many contemporary overviews of the state of the field; outcomes appear to be better with younger children (e.g., pre-adolescence)

Table 3.2 Parent Training Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Taylor, Schmidt, Peeler, & Hodgins, 1998	RCT; Webster-Stratton's Parents and Children Series (PACS; $n = 46$) vs. eclectic atypical treatment ($n = 46$) vs. wait-list control ($n = 18$)	Families of 3 – 8 year olds with behavior problems	Age: 3 – 8 Gender: 73% boys 27% girls Race/Ethnicity: DK (92% of mothers born in Canada)	PACS and eclectic treatment showed improvements compared to wait list controls (total problems); PACS showed more pronounced effects in intensity of problems and CBCL total problems score; eclectic showed more pronounced effects in attentional difficulties	Sample collected from families who contacted a public mental health clinic for assistance related to behavior problems or parenting issues for child with behavior problems
Webster-Stratton, Kolpacoff, & Hollinsworth, 1988	RCT; individually administered videotaped modeling vs. group discussion videotape modeling treatment vs. group discussion treatment vs. wait list control ($n = 114$)	Families with a child with conduct problems	Age: 3 – 8 Gender: 69% boys 31% girls Race/Ethnicity: DK	Significant changes, relative to controls, for families in all treatment groups; few differences among 3 interventions, but consistent trend for better outcomes associated with group discussion videotape modeling	
Webster-Stratton & Hammond, 1997	Quasi-experimental design; child training vs. parent training vs. child training plus parent training vs. wait list control ($n = 97$)	Families of children with early-onset conduct problems; children met criteria for ODD or CD to be included	Age: 4 – 7 Gender: 74% boys 26% girls Race/Ethnicity: 86% White 14% Other	Assessments at baseline, 2 months post-treatment and 1 year; all three treatments showed improvements compared to controls; child training plus parent training produced most significant improvements at 1-year follow-up	
Wiltz & Patterson, 1974	Quasi-experimental design; parent training vs. Living with Children curriculum vs. untreated control group ($n = 16$)	Boys with aggressive behavior	Age: $M = 9.8$ Gender: 100% boys Race/Ethnicity: DK	Outcomes available at end of 5 week treatment; boys in intervention showed decreased deviant behavior in targeted areas	Small sample size; short-term outcomes; included because this is listed as one of Brestan and Eyberg's (1998) well established treatments

Table 3.3 Community-Based Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Burns, Farmer, Angold, Costello, & Behar, 1996	RCT; treatment team led by a case manager <i>vs.</i> treatment team without a case manager ($n = 167$)	Youth with SED being served by community mental health center (77% had diagnosis of externalizing disorder)	Age: 8 – 17 Gender: 53% boys 47% girls Race/Ethnicity: 13% African American 77% White	Outcomes available for one year period following initiation of treatment; youth with case manager remained in services longer, received wider array of services, fewer inpatient days, and more community-based services; symptoms and functioning did not differ between groups	Control group also served by multi-agency treatment teams; both groups receiving some version of coordinated care
Clark, Lee, Range, & McDonald, 1996	RCT; regular foster care <i>vs.</i> Fostering Individualized Assistance Program ($n = 132$)	Youth in foster care with externalizing behavior problems	Age: 7 – 16 Gender: DK Race/Ethnicity: DK	Outcomes approximately 2.5 years after program entry; youth in Fostering Individualized Assistance Program showed fewer placement changes, amount of time spent running away from home, fewer days incarcerated	All findings are only borderline significant; target group focused on foster children who had behavior problems (this definition is less strictly oriented towards disruptive disorders than most other interventions)
Evans, Armstrong, & Kuppinger, 1996	RCT; Treatment Foster Care ($n = 15$) <i>vs.</i> Family-Centered Intensive Case Management ($n = 27$); Family-Centered Intensive Case Management uses a team approach (including a parent advocate) to provide intensive support to parents of youth with Serious Emotional Disorder	Children referred for placement in Family Based Treatment (e.g., Treatment Foster Care); 69% had diagnosis of a disruptive behavior disorder	Age: 5 – 12 Gender: 91% boys 9% girls Race/Ethnicity: 33% White 67% African American	Outcomes collected every six months and six months post-discharge (duration in services varies, based on needs); improvements in symptoms across time; trend in favor of Family-Centered Intensive Case Management group, but not statistically significant	Results very preliminary; many children still in services; suggests that youth referred for out of home placements can be served equally well at home, with intensive supports for family

Table 3.3 Community-Based Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Fraser & Nelson, 1997	Meta-analysis; reviewed findings on Family Preservation Services	Youth at risk of out-of-home placement; includes various subgroups (e.g., abuse/neglect, juvenile delinquents, family reunification)	DK	Outcomes for child welfare are most relevant in terms of age range (<13); results mixed, with some evidence (though small) of effects on out of home placements; outcomes for juvenile justice are most relevant in terms of disruptive disorders; tend to focus on somewhat older youth (13 – 15); effect sizes range from moderate to large (.48 –.92)	Mixed findings with many methodological caveats; positive findings for juvenile justice cases come almost exclusively from MST programs
Henggeler, Pickrel, & Brondino, 1999	RCT; multisystemic therapy vs. usual service (<i>n</i> = 118)	Juvenile offenders with substance abuse/dependence	Age: 12 – 17 Gender: 79% boys 21% girls Race/Ethnicity: 50% African American 47% White 3% Other	Outcomes: end of treatment and 6 month post-treatment; some decrease in self-reported alcohol/drug use at end of treatment in favor of multisystemic therapy; difference not apparent in urine tests or at 6-months post-treatment; MST youth experienced fewer days of out of home placement	Many other multisystemic therapy sites show positive effects; mostly, MST has been conducted with adolescent populations; smaller effects in this study than in other MST studies may reflect lower treatment adherence by clinicians; age range mostly adolescents; included because it targeted substance use as an outcome

Table 3.3 Community-Based Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Lochman, Burch, Curry, & Lampron, 1984	RCT; 12-week anger-coping <i>vs.</i> anger-coping plus goal setting <i>vs.</i> goal setting <i>vs.</i> no treatment (<i>n</i> = 76)	Boys with aggressive behavior	Age: 9 – 12 Gender: 100% boys Race/Ethnicity: 53% African American 17% White	Boys in anger coping and anger coping plus goal setting showed more improvement than other two groups (including less disruptive and aggressive off-task behavior, parental reports of aggression; self-esteem); both anger-coping groups showed improvement, but addition of goal setting improved outcomes	Very short-term follow-up; reported in a research note, so there is very little information available on details
Lochman, Lampron, Gemmer, Harris, & Wyckoff, 1989	RCT; 18-session anger coping (<i>n</i> = 11) <i>vs.</i> anger coping plus teacher consultation (<i>n</i> = 13) <i>vs.</i> no treatment (<i>n</i> = 8)	Boys with aggressive behavior	Age: 9 – 13 Gender: 100% Boys Race/Ethnicity: 69% African American 31% White	Post-treatment differences in off-task disruptive-aggressive behavior, perceived social competence, teacher-reported aggressiveness; both intervention groups showed similar improvements	Small sample size; consultation was very minimal (6 hours in small groups)
Schoenwald, Ward, Henggeler, & Rowland (in press); Henggeler, et al., 1999	RCT; 4-month multisystemic therapy <i>vs.</i> hospitalization (<i>n</i> = 113)	Children presenting for psychiatric emergency hospitalization; 62% had disruptive disorders, 38% had been involved with juvenile justice system	Age: 10 – 17 Gender: 65% boys 35% girls Race/Ethnicity: 64% African American 34% White	Outcomes available through end of multisystemic therapy: 75% of children not hospitalized, fewer days in any out of home placement, decreased in externalizing symptoms, and improved family functioning	Outcome data available only at end of multisystemic therapy treatment; many youth in study were older than 12

Table 3.4 Clinic-Based Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Fonagy & Target, 1994	Chart-review of youth who received psychoanalysis and psychotherapy at Anna Freud Center; children with disruptive disorders compared to matched sample of children with emotional disorder ($n = 135$)	Children with disruptive disorders	Age: $M = 9.0$ Gender: 75% boys 25% girls Race/Ethnicity: DK	33% of disruptive youth not diagnosable at completion of treatment; improvement was higher for youth with ODD than with CD; overall, youth with disruptive disorders improved less than youth with emotional disorders	Treatment most effective with youth who remained in treatment for full course of psychoanalytic treatment (e.g., 3 years); 31% terminated treatment within first year
Grizenko, Papineau, & Sayegh, 1993; Grizenko, 1997	Quasi-experimental design; day treatment vs. wait list ($n = 30$)	Youth with disruptive disorders who are unable to function in home/school	Age: 5 – 12 Gender: 77% boys 23% girls Race/Ethnicity: DK	At 6-month follow-up, treatment group more improved than controls on behavior, self-perception, school reintegration	Small sample size; 5-year follow-up shows some deterioration of outcomes, but still improvements over baseline
Luk, Staiger, Mathai, Field, & Adler, 1998	RCT; modified cognitive-behavioral therapy vs. conjoint family therapy vs. eclectic therapy ($n = 32$)	Outpatient children with at least 3 definite conduct symptoms (by parent or teacher questionnaire)	Age: $M = 8.5$ years Gender: 63% boys 37% girls Race/Ethnicity: DK (13% from non-English speaking families)	Outcomes measured 6 months post-intervention; no significant differences between groups; significant improvements for all groups in parent ratings of internalizing and externalizing behaviors, irritability, aggressiveness	Excluded youth who met criteria for ADHD; small sample size
Kazdin, Siegel, & Bass, 1992	RCT; 6 – 8 month problem-solving skills training vs. parent management training vs. combination ($n = 97$)	7 – 13 year olds referred for treatment at a psychiatric facility (outpatient branch)	Age: 7 – 13 Gender: 78% boys 22% girls Race/Ethnicity: 31% African American 69% White	All groups improved over time; combination group showed greatest improvement in a variety of areas, including antisocial and delinquent behavior, depression, and family functioning	Changes continued during the 1 year follow-up; only parent management training alone showed no additional gains during follow-up

Table 3.4 Clinic-Based Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Szapocznik, Santisteban, Rio, Perez-Vidal, Santisteban, (& Kurtines, 1989	RCT; 13-session family effectiveness training <i>vs.</i> minimal contact control (<i>n</i> = 79)	Outpatient children with behavioral or psychological problems	Age: 6 – 12 Gender: 71% boys 29% girls Race/Ethnicity: 76% Cuban 24% Other Hispanic	End of treatment and 6 months favored family effectiveness training on family functioning, children's behavior problems, and children's self-concept	Intervention designed to improve family relationships in an effort to strengthen families and prevent future substance use among youth; designed specifically for Hispanic families to address intergenerational and intercultural conflicts

Table 3.5 Prevention Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Conduct Problems Prevention Research Group, 1999	Quasi-experimental design; behaviorally disruptive kindergartners were screened ($n = 891$); half of the schools designated as intervention and half as control; intervention was multi-faceted; universal intervention adapted version of PATHS (Promoting Alternative Thinking Strategies); selective intervention included: parent groups, child social skills training, academic tutoring	Kindergartners with early disruptive patterns who are at-risk for more substantial behavioral problems	Age: Kindergartners Gender: 69% boys 31% girls Race/Ethnicity: 51% African American 47% White	Outcomes during 1st grade: intervention group showed improvement in reading, positive peer interaction and peer preference scores, more positive parenting, behavioral improvement	Moderate initial effects for a broad-based universal and selective prevention program; effects similar for boys and girls, and for different races
Reid, Eddy, Fetrow, & Stoolmiller, 1999	RCT; 10-week intervention focusing on parents and students (playground and classroom behavior) vs. control; based on variety of previous prevention work, especially that conducted by Oregon Social Learning Center	Schools in areas with above-median rates of juvenile arrests	Age: 1st and 5th grades Gender: 50% boys 50% girls Race/Ethnicity: 85% White 2% African American	Decreases in mother aversive verbal behavior and child physical aggression behavior in playground (in 1st graders)	Initial report on Project LIFT (Linking the Interests of Families and Teachers); new project, longer term outcomes not available; attempting to incorporate a theoretical model of prevention with universal intervention; not targeted to identified or diagnosed children

Table 3.5 Prevention Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Vitaro & Tremblay, 1994; McCord, Tremblay, Vitaro, & Desmarais-Garvais, 1994; Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995	RCT; parent, social skills, and cognitive problem-solving training (<i>n</i> = 46) <i>vs.</i> control (<i>n</i> = 58)	Children with elevated aggression and risk of later conduct problems; selected on the basis of teacher report	Age: 6 (at selection) 8 – 9 at intervention Gender: 100% boys Race/Ethnicity: 100% French-speaking, White, Canadians	Outcomes (assessed by teacher, peer, and self report) included aggression delinquency, and characteristics of friends when students were 10 - 12 years old; at age 12, teachers reported less aggressiveness for treatment group; nonsignificant trends toward less self-reported delinquency and less disruptive friends	Eligibility based on scoring above 70th percentile on the Preschool Behavior Questionnaire during kindergarten; all parents had less than 15 years of schooling
Walker, Kavanagh, Stiller, Golly, Severson, & Feil, 1998	RCT; 3-month First Step to Success program (<i>n</i> = 46) <i>vs.</i> wait-list controls (<i>n</i> = 46); intervention screening, school intervention, and parent/caregiver training	Kindergartners with early signs of antisocial behavior patterns	Age: Kindergartners Gender: 74% boys 26% girls Race/Ethnicity: 93% White 7% Minority	Outcomes assessed during 1st or 2nd grade showed improved adaptive behavior, less maladaptive behavior, and less aggression (as measured by teacher report); results remained fairly constant at longer follow-up	Because of delayed intervention design, true comparison group not reported

Table 3.6 Psychopharmacological Studies of Childhood Disruptive Behavior Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Campbell, Adams, Small, Kafantarix, Silva, Shell, Perry, & Overall, 1995	Double-blind, placebo-controlled, within-subject alternating treatments experimental design; 6-week lithium <i>vs.</i> 2-week placebo (<i>n</i> = 50); 4 treatment cycles	Hospitalized children with conduct disorder	Age: 5 – 12 Gender: 92% boys 8% girls Race/Ethnicity: 48% Hispanic 38% African American 8% White 6% Other	During lithium period, children showed moderate or marked improvement (68% <i>vs.</i> 40%); other measures of behavior showed nonsignificant trends in favor of lithium	Lithium associated with increases on measures of tension-anxiety and confusion-bewilderment; short follow-up period
Cueva & Overall, 1996	Double-blind, placebo-controlled RCT; 6-week carbamazepine (<i>n</i> = 22) <i>vs.</i> placebo (<i>n</i> = 22) included 2-week placebo baseline, randomized assignment for 6 weeks, 1 week post-treatment placebo	Children with conduct disorder	Age: 5 – 12 Gender: 91% boys 9% girls Race/Ethnicity: 41% African American 46% Hispanic 9% White 4% Asian	Changes in aggressive behavior did not differ between groups	Small sample size; short follow-up period; noted several side effects of carbamazepine (transient leukopenia, rash, dizziness, pilopia)
Klein, 1998; results also reported in Klein, Abikoff, Klass, Ganeles, Seese, & Pollack, 1997	RCT; 5-week methylphenidate <i>vs.</i> placebo (<i>n</i> = 84)	Children with conduct disorder	Age: 6 – 15 Gender: 89% boys 11% girls Race/Ethnicity: 29% African American 65% White 6% Hispanic	Improved ratings on a range of behavioral outcomes by parent and teacher report; significantly more youth in treatment group rated as improved by all informants	2/3 of children met criteria for ADHD (in addition to CD); controlling for ADHD did not affect findings; representativeness of sample is not known

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Studies of Childhood Disruptive Behavior Disorders

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Studies of Childhood Anxiety and Anxiety Disorders

Studies of outpatient interventions for anxiety symptoms and anxiety disorders in school-aged children are presented in Table 4. Studies were included in this review if they covered children in the 6 – 12 years age range, although studies that also included younger children or adolescents were not excluded. Several approaches were combined to identify relevant published studies. The following key words and synonyms were searched in PsycINFO and Medline: anxiety, worries, fears, anxiety disorder, separation anxiety disorder, generalized anxiety disorder, overanxious disorder, avoidant disorder, panic disorder, agoraphobia, phobia, simple phobia, social phobia, and obsessive compulsive disorder.

The results of these searches were then crossed with the appropriate age group (6 – 12 years old), with treatment modalities (treatment, psychopharmacology, psychotherapy, cognitive behavior therapy, intervention, behavior modification), then with study type (randomized clinical trial, clinical trial), and time frame (1985 to 1999). Studies investigating school refusal/school phobia were also included because the behavior is so often associated with anxiety and anxiety disorders. Reference lists obtained from review articles and book chapters were searched to ensure that all of the relevant studies had

been identified. The initial pool of 75 articles was then reduced using the general inclusion criteria for this project. Thirty-eight papers were excluded for the following reasons: open-label drug study, single case report, all subjects older than 12 years old, retrospective chart review, or no comparison group. The final anxiety matrix (Table 4) includes 37 papers that met the inclusion criteria. The matrix divides the treatments into three categories: psychosocial, psychopharmacological, and adjunctive. This summary describes studies with treatments which have been found to be effective for children with symptoms of anxiety, studies with a mix of DSM-defined anxiety disorders overall, and finally, specific DSM anxiety disorders.

Most of the anxiety treatment literature has focused on childhood fears, phobias, or anxiety symptoms, rather than clearly defined anxiety disorders. Psychosocial interventions reviewed began with Blagg's 1984 study which demonstrated that "behavioral therapy" was more effective than hospitalization or home-tutoring and psychotherapy at returning school-refusing children back to school. Systematic desensitization, modeling (either live or symbolic), modeling in conjunction with assisted participation and/or desensitization, and reinforced practice (in vivo exposure and rewards) have also been

shown to be more effective than no treatment in reducing phobic symptoms. Cognitive behavior therapy (CBT) has also been found to reduce anxiety symptoms and fears. Interestingly, in several of the CBT studies non-specific therapeutic interventions were also effective in reducing anxiety symptoms. There are no studies on the effectiveness of medication without concurrent psychotherapy for reducing anxiety symptoms. Three adjunctive studies on the treatment of anxiety symptoms were identified, however the effectiveness of medication to treat anxiety symptoms in children has not been definitively demonstrated to date.

Seven studies (5 on cognitive behavior therapy; 2 on medication) have assessed treatments for a mix of DSM-defined anxiety disorders. Various types of cognitive behavior therapy have been shown to be effective in reducing anxiety symptoms in these children. Neither of the drugs investigated (alprazolam and clonazepam) were found to be more effective than placebo in reducing symptoms in children with DSM-defined anxiety disorders.

In this matrix, nine studies meeting the criteria focused on the treatment of specific DSM childhood anxiety disorders: six were interventions for obsessive compulsive disorder (OCD), one was for separation anxiety disorder, and two for simple phobia. No studies on the treatment of generalized anxiety disorder, social phobia, or panic disorder met the criteria necessary to be included in this review.

Psychosocial treatments for DSM-defined social phobia included emotive imagery (a version of systematic desensitization) which was found to be an effective treatment for darkness phobia with gain maintained at three months; in the second study, exposure-based contingency management treatment and exposure-based cognitive self-control treatment resulted in substantial improvements on all outcome measures at 3, 6, and 12 months. Children in an educational support treatment, an approach chosen to control for “non-specific” therapeutic effects, also experienced significant symptom reduction that was maintained during follow-up. Only one DSM-defined disorder, OCD, has had effectiveness demonstrated for a pharmacological intervention. Four studies have evaluated use of clomipramine for OCD with contradictory results. Fluoxetine and sertraline have been reported to be more effective than placebo in reducing obsessive compulsive symptoms in children with an OCD diagnosis, but sample size for the fluoxetine study ($n = 14$) is too small to produce reliable results.

In conclusion, the effectiveness of behavior therapy and cognitive therapy for treatment of childhood anxiety disorders has been shown in a number of studies. Clearly, however, the current research on the treatment of childhood anxiety disorders contains many significant gaps that must be addressed in order to provide effective interventions for children and their families.

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders					
Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Barabasz, 1973	RCT; Imaginal systematic desensitization ($n = 42$) vs. no treatment control ($n = 41$)	Highly test anxious 5 th and 6 th graders	Age: DK Gender: DK Race/Ethnicity: DK	Children in treatment group obtained lower autonomic indices of test anxiety and significant improvement on measures of test performance	Polygraph used to measure autonomic indices
Barrett, Dadds, & Rapee, 1996	RCT; 12-session cognitive-behavior therapy ($n = 28$) vs. cognitive-behavior therapy plus family management ($n = 25$) vs. wait-list control ($n = 26$)	Children with DSM-III-R overanxious disorder ($n = 30$), separation anxiety disorder ($n = 30$), or social phobia ($n = 19$)	Age: 7 – 14 Gender: 57% boys 43% girls Race/Ethnicity: DK	Cognitive-behavior therapy more effective than control; 69.8% in either cognitive-behavior therapy group no longer met criteria for an anxiety disorder vs. 26% in the control; cognitive-behavior therapy plus family management more effective than cognitive-behavior therapy alone; at 12-month follow-up 70.3% in the cognitive-behavior therapy alone and 95.6% in the cognitive-behavior therapy plus family management no longer met criteria for an anxiety disorder	Younger children (7 – 10) and girls responded better to the cognitive-behavior therapy plus family management intervention; used manualized protocol; small overall dropouts
Blagg & Yule, 1984	Quasi-experimental design; behavior therapy ($n = 30$) vs. hospitalization ($n = 16$) vs. psychotherapy and home tutoring ($n = 20$)	School refusing youth	Age: 11 – 16 Gender: 46% boys 54% girls Race/Ethnicity: DK	Success (defined as return to school measured at 1 year) was greatest for behavior therapy group (93.3%) vs. hospitalization (37.5%) vs. psychotherapy and home tutoring (10%)	Groups not matched; subjects not randomized; behavior therapy group significantly younger than other two groups; therapies not manualized; psychiatric diagnoses not assessed; no control group

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Cornwall, Spence, & Schotle, 1992	RCT; 6-week emotive imagery therapy <i>vs.</i> wait-list control group (<i>n</i> = 24)	Darkness phobia; children met DSM-III-R criteria for simple phobia; children excluded for comorbid anxiety disorder, other anxiety disorders, and taking medication	Age: 7 – 10 Gender: DK Race/Ethnicity: DK	Significant reduction in darkness fear, anxiety, and impairment in treatment group; improvement maintained at 3-month follow-up	Emotive imagery is a variant of systematic desensitization; no significant reduction in fears and anxiety in control group
Graziano & Mooney, 1980; Graziano & Mooney, 1982	RCT; 3-weeks of verbal self-instruction (<i>n</i> = 17) <i>vs.</i> wait-list control group (<i>n</i> = 16)	Children with severe nighttime fears present for more than two years	Age: 6 – 13 Gender: 54% boys 46% girls Race/Ethnicity: DK	Treatment group had significantly fewer fears than control group	Treatment gains were maintained or improved at both 6-month, 12-month, and 2 - 3 year follow-up
Kanfer, Karoly, & Newman, 1975	RCT; positive self-talk group (<i>n</i> = 15) <i>vs.</i> positive talk about the environment group (<i>n</i> = 15) <i>vs.</i> reciting nursery rhymes (<i>n</i> = 15)	Children with fear of the dark	Age: 5 – 6 Gender: DK Race/Ethnicity: DK	Greater reduction in fear for positive self-talk group relative to other two groups	Mean change in tolerance to remain in dark room only 2 minutes; no psychiatric diagnosis
Kendall, 1994; Kendall & Southam-Gerow, 1996	RCT; 16-session individual cognitive-behavior therapy (<i>n</i> = 27) <i>vs.</i> wait-list (<i>n</i> = 20)	Children with DSM-III-R diagnosis of overanxious disorder, separation anxiety disorder, or avoidant disorder; children excluded for primary diagnosis of specific phobia or current anti-anxiety medication	Age: 9 – 13 Gender: 60% boys 40% girls Race/Ethnicity: 75% White 1% African American 24% Other	Cognitive-behavior therapy was more effective than control; 64% of the treated subjects no longer met criteria for an anxiety disorder <i>vs.</i> 5% in the control;	Treatment gains maintained at 1 year and 3 – 5 year follow-up; data supports long-term beneficial effects of cognitive-behavior therapy; 22% non-completion rate; comorbidity included 32% depression, 15% ADHD, 2% conduct disorder, 60% simple phobias; manualized treatment

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Kendall, Flannery-Schroeder, Panichelli-Mindel, Southam-Gerow, Henin, & Warman, 1997	RCT; 16-week individual cognitive-behavior therapy (<i>n</i> = 60) vs. wait-list control (<i>n</i> = 34)	Children with primary anxiety disorder; overanxious disorder (<i>n</i> = 55), separation anxiety disorder (<i>n</i> = 22), avoidant disorder (<i>n</i> = 17)	Age: 9 – 13 Gender: 62% boys 38% girls Race/Ethnicity: 85% Caucasian 5% African American 2% Hispanic or Asian 5% Other	Cognitive-behavior therapy was more effective than waitlist control; 53.2% no longer met diagnostic criteria for an anxiety disorder in treatment group vs. 5.9% in the wait-list group; improvement in coping skills/functioning;	Treatment gains and functional improvement maintained at 1 year follow-up; treatment effect the same for all three anxiety diagnoses
King, Tonge, Heyne, Pritchard, Rollings, Young, Myerson & Ollendick, 1998	RCT; 4-week cognitive-behavior therapy and parent/teacher behavior management (<i>n</i> = 16) vs. wait-list (<i>n</i> = 16)	School refusing children; 85.3% with a psychiatric diagnosis; subjects excluded if currently on antianxiety or antidepressant medication	Age: 5 – 15 Gender: 53% boys 47% girls Race/Ethnicity: DK	Intensive, brief cognitive-behavior therapy was superior to control; 88.2% of cognitive-behavior group showed clinical improvement in school attendance vs. 29.4% of wait-list control	Treatment gains were maintained at 3-month follow-up; no attrition; parental training might have enhanced the effectiveness of the treatment
Kondas, 1967	RCT; relaxation training (<i>n</i> = 6) vs. group imaginal systematic desensitization (<i>n</i> = 6) vs. fear hierarchy without relaxation (<i>n</i> = 5) vs. no relaxation control (<i>n</i> = 6)	Children with "stage fright"	Age: 11 – 15 Gender: DK Race/Ethnicity: DK	Fear reduction greatest for systematic desensitization; relaxation training led to temporary fear reduction but treatment gains were maintained at follow-up	Treatment gains maintained at 5-month follow-up for systematic desensitization

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Last, Hansen, & Franco, 1998	RCT; 12-week cognitive-behavior therapy ($n = 20$) vs. educational support therapy ($n = 21$)	Children with school refusal and DSM-III-R anxiety disorder of phobic disorder (58%), separation anxiety disorder (32%), avoidant disorder (4%), or panic disorder (2%); subjects excluded due to current diagnosis of depression or psychiatric medication	Age: $M = 12$ Gender: 33% boys 67% girls Race/Ethnicity: 90% Caucasian 4% African American 6% Hispanic	No significant between-group differences in school refusal behavior, symptoms of anxiety, or depression; no between-group differences at 4 week follow-up; 30% of both groups reported "moderate" difficulty returning to school the following year	Cognitive-behavior therapy group had highest attrition rate; both treatments were more effect in younger children
Lewis, 1974	RCT; modeling of water play on film vs. assisted participation in the feared activity vs. combined modeling and participation vs. controls (total $n = 40$)	Children with fear of water	Age: 5 – 12 Gender: 100% boys Race/Ethnicity: 100% African American	Greatest reduction in avoidance behavior with assisted participation plus modeling; assisted participation alone was more effective than modeling alone; each treatment was more effective than no treatment	
Mann & Rosenthal, 1969	RCT; individual desensitization ($n = 10$) vs. vicarious individual desensitization ($n = 10$) vs. group desensitization ($n = 10$) vs. vicarious group observing group desensitization ($n = 10$) vs. vicarious group observing individual desensitization ($n = 10$) vs. no treatment controls ($n = 21$)	Test anxiety	Age: 12 – 14 Gender: 45% boys 55% girls Race/Ethnicity: DK	All active treatments superior to control; no significant between-group differences	Small sample size

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders					
Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Menzies & Clarke, 1993	RCT; 3-session reinforced practice <i>vs.</i> live modeling <i>vs.</i> in vivo exposure plus reinforced practice modeling <i>vs.</i> assessment only control ($n = 48$)	Children with water phobia	Age: $M = 5.5$ Gender: 65% boys 35% girls Race/Ethnicity: DK	Reinforced practice produced clinically significant reduction in anxiety and avoidance of water activities; gains maintained at 3 months; gains generalized to other water situations	Modeling was not more effective than control condition
Miller, Barrett, Hampe, & Noble, 1972	RCT; 24-session systematic desensitization <i>vs.</i> verbal or play psychotherapy <i>vs.</i> wait-list control (total $n = 67$)	Children with a variety of "phobic" symptoms; 69% with a fear of school	Age: 6 – 15 Gender: 55% boys 45% girls Race/Ethnicity: 96% White 4% African American	Both treatments equally efficacious in reducing phobic behavior; both treatments more effective than wait-list control	Findings of efficacy only true for children ages 6 – 10; both treatments included parent training
Murphy & Bootzin, 1973	RCT; Up to 4 sessions of active contact desensitization <i>vs.</i> passive contact desensitization <i>vs.</i> no treatment control (total $n = 67$)	Children with snake-phobia	Age: 6 – 9 Gender: 49% boys 51% girls Race/Ethnicity: DK	Both treatments effective; no significant between-group differences for active treatments; 86.7% of treated children overcame snake phobia <i>vs.</i> 22.7% controls	In vivo desensitization is a very efficient treatment; mean treatment length was 15 minutes; maximum treatment length was 32 minutes (four 8-minute sessions)
Obler & Terwilliger, 1970	RCT; 5-session exposure and reinforced practice ($n = 15$) <i>vs.</i> no treatment control ($n = 15$)	Neurologically impaired children with phobic disorders (either fear of dogs or of riding on a bus)	Age: 7 – 12 Gender: DK Race/Ethnicity: DK	Treatment superior to control; all children in treatment condition able to overcome phobia <i>vs.</i> 3 children in control condition	IQ did not affect outcome
Ritter, 1968	RCT; live modeling/vicarious desensitization <i>vs.</i> participant modeling/contact desensitization <i>vs.</i> no treatment control (total $n = 67$)	Children with snake-avoidant behavior	Age: 5 – 11 Gender: 36% boys 64% girls Race/Ethnicity: DK	Contact desensitization (80% success) more effective than vicarious desensitization (53.3% success); both treatments more effective than control (0% success)	Group treatment; reduction in fear reported by treatment groups not significantly different from controls

Table 4.1 Psychosocial Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999	RCT; 8-10 week group cognitive-behavior therapy (<i>n</i> = 37) vs. wait-list control (<i>n</i> = 19)	Youth with a primary DSM-III-R anxiety disorder	Age: <i>M</i> = 10 Gender: 61% boys 39% girls Race/Ethnicity: 45% White 49% Hispanic 5% Other	Group cognitive-behavior therapy more effect than control; 64% children in active treatment no longer met criteria for an anxiety disorder vs. 13% in control	Treatment gains maintained at 3, 6, and 12-month follow-up; 27% drop-out rate
Silverman, Kurines, Ginsburg, Weems, Rabian, & Serafini, 1999	RCT; 10-week exposure based contingency management (<i>n</i> = 41) vs. exposure based cognitive self-control (<i>n</i> = 40) vs. nonspecific education support control (<i>n</i> = 23)	Children with DSM-III-R phobias (83.6% primarily simple phobias)	Age: <i>M</i> = 9.8 Gender: 53% boys 47% girls Race/Ethnicity: 62% White 37% Hispanic 2% Other	Improvement post-treatment and at follow-up for all three groups; 88% contingency management children, 55% self-control children, and 56% education support children no longer meet diagnostic criteria	Treatment gains maintained at follow-up; 62% of sample between ages 6 – 11; 72% with comorbid disorder; manualized treatment; 22% non-completion rate

Table 4.2 Psychopharmacological Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Berney, Klovin, Bhate, Garside, Jeans, Kay & Scarth, 1981	Double-blind, placebo-controlled RCT; 12-week clomipramine ($n = 27$) vs. Placebo ($n = 19$); concurrent treatment with individual therapy	Children with school phobia; 87% with separation anxiety	Age: 9 – 15 Gender: 41% boys 59% girls Race/Ethnicity: DK	Clomipramine not superior to placebo in reducing separation anxiety, school refusal, or neuroticism	Variable dosing by age; trial predates DSM-III
Bernstein, Garfinkel, & Borchardt, 1990	Double-blind, placebo-controlled RCT; 8-week alprazolam ($n = 9$) vs. imipramine ($n = 6$) vs. placebo ($n = 9$); concurrent psychotherapy	Children with school refusal	Age: 7 – 18 Gender: 54% boys 46% girls Race/Ethnicity: DK	Mixed results; both active treatments resulted in symptom reduction on measures of anxiety and depression; alprazolam with largest effect; no significant differences relative to control on other measures	Variable dosing; none to mild side effects; 84% of subjects with depression; 20% drop out rate
DeVeauugh-Geiss, Moroz, Biderman, Cantwell, Fontaine, Greist, Reichler, Katz, & Landau, 1992	Double-blind, placebo-controlled RCT; 8-week clomipramine ($n = 31$) vs. placebo ($n = 29$)	Children with DSM-III diagnosis of obsessive-compulsive disorder	Age: 10 – 17 Gender: 65% boys 35% girls Race/Ethnicity: 97% White 3% African American	Clomipramine more effective than placebo in reducing obsessive-compulsive symptoms and improving functioning; 2 children terminated treatment due to adverse side effects	Unclear whether an age effect; only 53% continued the drug for one year despite its efficacy; 4 children terminated treatment during open label due to adverse side effects
Flament, Rapoport, Berg, Sceery, Kilts, Mellstrom, & Linoila, 1985	Double-blind, placebo-controlled, within-subject crossover experimental design; 11-week clomipramine vs. placebo; concurrent individual supportive psychotherapy (total $n = 27$)	Children with DSM-III diagnosis of obsessive-compulsive disorder	Age: 6 – 18 Gender: 67% boys 23% girls Race/Ethnicity: DK	75% of subjects on clomipramine showed "marked to moderate" improvement in obsessive-compulsive symptoms; significant anticholinergic side effects noted	Improvement in obsessive-compulsive symptoms independent of baseline depression; 30% non-completion rate; variable dosing; most subjects hospitalized during trial; no significant change in symptoms of anxiety and depression; most subjects had prior unsuccessful medication trials

Table 4.2 Psychopharmacological Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Flament, Koby, Rapoport, Berg, Zahn, Cox, Denckla, & Lenane, 1990	2-7 years ($M = 4.4$ years) follow-up of 27 subjects admitted to NIMH between 1977-1983 (19/27 were in Flament et al., 1985 study); $n = 93\%$ of original sample and 29 matched controls	Children with severe primary DSM-III OCD	Age at follow-up: 13 – 24 Gender: 68% boys 32% girls Race/Ethnicity: DK	68% of treatment sample still had OCD; 52% had a comorbid Axis I disorder; only 28% had no current psychiatric diagnosis compared with 35% of controls; most common psychiatric diagnosis for controls: alcohol and drug abuse	Subjects had received intermittent, often irregular treatment during follow-up period; initial good response to clomipramine had no prognostic benefit for outcome
Gittelman-Klein & Klein, 1973	Double-blind, placebo-controlled RCT; 6-week imipramine and behavior therapy ($n = 16$) vs. placebo and behavior therapy ($n = 19$)	Children with school phobia and separation anxiety	Age: 6 – 14 Gender: 54% boys 46% girls Race/Ethnicity: 97% White 3% Other	Positive treatment effect was obtained on parent and clinician ratings of improvement for imipramine and behavior group; return to school was 81% for imipramine and behavior vs. 47% for placebo and behavior	Variable dosing; predates DSM-III; 35% of subjects depressed; side effects reported were primarily anticholinergic; drop-out rate not reported
Graae, Milner, Rizzotto, & Klein, 1994	Double-blind, placebo-controlled, within-subject crossover experimental design; 4-week clonazepam vs. placebo ($n = 12$); placebo group all also received supportive psychotherapy	Children with DSM-III-R anxiety disorders	Age: 7 – 13 Gender: 53% boys 47% girls Race/Ethnicity: 100% Caucasian	No significant between-group differences; side effects included drowsiness, irritability and oppositionality	Questionable power due to small sample size; variable dosing; 20% of subjects dropped out due to adverse side effects, including disinhibition, aggressivity, and self-harming behavior

Table 4.2 Psychopharmacological Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Klein, Koplewicz, & Kanner, 1992	Double-blind, placebo-controlled RCT; 6-week imipramine and behavior therapy ($n = 11$) vs. placebo and behavior therapy ($n = 10$); study included a 4-week behavior therapy run-in with nonresponders eligible for study	Children with DSM-III separation anxiety disorder who did not respond to 4-week behavior therapy run-in	Age: 6 – 16 Gender: 66.7% boys 33.3% girls Race/Ethnicity: 95% Caucasian 5% Hispanic	No significant between-group differences across multiple measures; more side effects reported for imipramine group; nonsignificant trend toward increase EKG PR and QRS intervals in children receiving imipramine	Of the original sample ($n = 45$), 24 subjects responded to brief 4-week behavior therapy run in; variable dosing
Leonard, Swedo, Rapoport, Koby, Lenane, Cheslow, & Hamburger, 1989	Double-blind, placebo-controlled, within-subject crossover experimental design; 10-week clomipramine vs. 10-week desipramine ($n = 49$)	Children with DSM-III diagnosis of obsessive-compulsive disorder	Age: 6 – 18 Gender: 63% boys 37% girls Race/Ethnicity	Clomipramine more effective than desipramine in reducing obsessive-compulsive symptoms and depressive symptoms	2 week washout period prior to study; ongoing psychotherapy with private psychotherapist not discontinued during trial; variable dosing; 8% did not complete trial; side effect profile for medications were similar
Leonard, Swedo, Lenane, Rettew, Cheslow, Hamburger & Rapoport, 1991; Leonard, Swedo, Lenane, Rettew, Hamburger, Bartko, & Rapoport, 1993	Double-blind, within-subject alternating treatments experimental design; 3-month clomipramine with half of the subjects randomized to 2-month continued clomipramine ($n = 11$) or desipramine ($n = 9$) followed by 3-months clomipramine for all subjects	Children with DSM-III diagnosis of obsessive-compulsive disorder	Age: 8 – 19 Gender: 58% boys 42% girls Race/Ethnicity: DK	89% of the group substituted with desipramine relapsed during 2-month comparison period vs. 18% of the non-substituted group; all 8 who relapsed with desipramine regained clinical response within one month of clomipramine reinstatement	Maintenance clomipramine treatment for obsessive-compulsive disorder seems indicated; even with long-term clomipramine treatment, obsessive-compulsive symptoms continued with varying intensity; 23% of subjects dropped out before the end of the trial; at 2 – 7 year follow-up, 43% met criteria for obsessive-compulsive disorder; 70% still taking medication, none receiving behavior therapy; 81% improved from baseline

Table 4.2 Psychopharmacological Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
March, Biederman, Wolkow, Safferman, Mardekian, Cook, Cutler, Dominguez, Ferguson, Muller, Riesenber, Rosenthal, Sallee, & Wagner, 1998	RCT; 12-week sertraline ($n = 92$) vs. placebo ($n = 95$)	Children with DSM-III diagnosis of obsessive-compulsive disorder	Age: 6 – 17 Gender: DK Race/Ethnicity: DK	Sertraline resulted in significantly more improvement of obsessive-compulsive symptoms relative to placebo; mild to moderate side effects and negligible cardiovascular effects noted	Titrated dosing; significantly more discontinuation due to sertraline (13%) than placebo (3.2%); 16.6% non-completion rate
Riddle, Scahill, King, Hardin, Anderston, Ort, Smith, Leckman, and Cohen, 1992	Double-blind, placebo-controlled, within-subject crossover experimental design; fluoxetine ($n = 7$) vs. placebo ($n = 7$)	Children with DSM-III-R diagnosis of obsessive-compulsive disorder	Age: $M = 11.8$ Gender: 43% boys 57% girls Race/Ethnicity: 99% White 1% Other	Obsessive-compulsive symptoms decreased by 30-45% on fluoxetine and 12-27% on placebo; 50% of subjects who crossed over to placebo terminated due to symptom resurgence;	Mild-moderate side effects; one child became suicidal on fluoxetine (this resolved when the drug was discontinued); fixed dosing (20 mg); 14 out of 30 subjects meeting inclusion criteria agreed to participate; 50% of subjects in supportive or psychodynamic psychotherapy during trial; only 43% completed entire 20-week trial so crossover analysis side effects not feasible
Simeon, Ferguson, Knott, Roberts, Gauthier, Dubois & Wiggins, 1992	Double-blind, placebo-controlled RCT; 4-week alprazolam ($n = 17$) vs. placebo ($n = 13$) One month follow-up	Children with primary diagnosis of overanxious disorder or avoidant disorder	Age: $M = 12.6$ Gender: 77% boys 23% girls Race/Ethnicity: DK	No significant between-group differences in global ratings of clinical improvement; no significant differences at one month follow-up	Variable dosing; no discussion of specific age effects; trend toward improvement in the avoidant group

Table 4.3 Adjunctive Studies of Childhood Anxiety Disorders

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
De Haan, Hoogduin, Buitelaar, & Keijsers, 1998	RCT; 12-week behavior therapy (<i>n</i> = 12) <i>vs.</i> clomipramine (<i>n</i> = 10)	Children with DSM-III-R diagnosis of obsessive-compulsive disorder	Age: 8 – 18 Gender: 50% boys 50% girls Race/Ethnicity: DK	Significant improvement with both treatments (clomipramine 33.4%; behavior therapy 59.9%); in non-responder extension, approximately 35% reported improvement in symptoms	No untreated control group; variable dosing; small sample size

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Studies of Childhood Posttraumatic Stress Disorder

A systematic search for peer-reviewed empirical studies of childhood posttraumatic stress disorder (PTSD) was conducted using PsycINFO and Medline electronic databases. Studies that met the following criteria were included in the final report: (1) were identified in the electronic database by one or more of the following study descriptors: treatment outcome study, clinical trial, controlled clinical trial, or randomized controlled trial; (2) included subjects between the ages of 6 and 12 as the primary treatment target population, although studies that included younger children and adolescents were not excluded; (3) were published between 1985 and 1999; and (4) were published in the English language. Reference lists from review articles and book chapters were also searched. This strategy identified 58 potential empirical peer-reviewed studies. This number was reduced by excluding studies that were not primarily concerned with treatment outcome and studies that had neither controlled nor quasi-experimental designs. This left 5 peer-reviewed controlled studies of psychosocial treatment for children with PTSD. No controlled psychopharmacological studies were found. These studies are presented in Table 5.

In these five studies, treated children had either a PTSD diagnosis or PTSD symptoms. The identified trauma treated in three of the studies was sexual abuse; earthquake victims and a mix of trauma types (excluding abuse) were the subjects of the other two studies. The most common research design was an RCT and there were one each of a quasi-experimental and single case study series design. The interventions were time-limited, provided individual or group therapy, and were cognitive-behavioral in orientation. The largest study had a sample of 100 children, two-year follow-up, and treatment arms that included parent treatment. In general, positive findings, such as decreased severity or number of PTSD symptoms, were reported. Manualized interventions were developed for several of these studies, creating the potential for replication.

Both the relatively recent recognition of PTSD in children and the measurement of it may partially account for the limited clinical research on this disorder. The psychosocial treatment literature for children with PTSD is at a very early stage and pharmacological research is nonexistent. This limited evidence base, considering the small number of studies, is further

characterized by relatively small sample sizes (a range of 15 – 100 subjects), precluding further analysis by gender or racial /ethnic group, despite diversity in these study samples. The current status of PTSD treatment research suggests both further

treatment development and controlled replications of the two well-delineated interventions identified as cognitive behavior therapy as next steps.

Table 5.1 Psychosocial Studies of Childhood Posttraumatic Stress Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Berliner & Saunders, 1996	RCT; the final sample of 80 children were randomly assigned to 10 week index ($n = 48$) and comparison treatment group ($n = 32$); both received group sexual abuse treatment; the index group also received stress inoculation training and gradual exposure treatment	Children referred by parents, child protective services, juvenile justice, health and mental health providers; all with a history of sexual abuse and 81% a chart diagnosis of PTSD	Age: 4 – 13 Gender: 11% boys 89% girls Race/Ethnicity: 74% White 11% African American 6% Hispanic 9% Other	Improvement over time on a variety of symptoms; no differences between-groups in improvement on fear and anxiety symptoms; at the 2 year follow-up the majority of children in both groups reverted to baseline levels	One- third of recruited children did not complete treatment sessions; completers and non-completers did not differ on key case variables; multiple statistical comparisons were conducted without correction for Type II error
Celano, Hazzard, Webb & McCall, 1996	RCT; 8 sessions, mostly conducted conjointly, with a nonoffending caretaker and a sexually abused girl; Recovering from Abuse Program ($n = 15$) vs. treatment as usual ($n = 17$), vs. supportive, unstructured psychotherapy	Girls who experienced sexual abuse in the past three year period recruited mostly from a pediatric emergency clinic in a public hospital; PTSD symptoms assessed, but no diagnosis reported	Age: 8 – 13 Gender: 100% girls Race/Ethnicity: 75% African American 22% White 3% Hispanic	PTSD symptoms decreased in both groups; abuse-related caretaker support increased; caretaker blame and expectations of negative impact on child decreased in the Recovering from Abuse Program at treatment termination	For the experimental condition, therapists received a 3-hour training session, weekly supervision and had access to a training manual; one- third of families dropped out of treatment; adjustment problems were greater at baseline in the control group
Deblinger & Lippman, 1996; Deblinger, Steer, & Lippmann, 1999	RCT; examined differential effects of child and non-offending mother participation in a 12 session cognitive behavioral intervention; 100 families assigned to standard community care ($n = 25$), vs. child ($n = 25$), vs. non-offending parent CBT ($n = 25$), and combined child and parent ($n = 25$)	School-aged sexually abused children were referred by child welfare agencies and presenting with at least three PTSD symptoms; 71% had a PTSD diagnosis based on standardized interview	Age: 7 – 13 Gender: 17% boys 83% girls Race/Ethnicity: 72% White 20% African American 6% Hispanic 2% Other	Posttreatment for children assigned to experimental conditions; PTSD and depressive symptoms and externalizing behavior decreased more than for control groups; greater use of effective parenting skills observed in the experimental groups; symptom findings held up through the two- year follow-up	In addition to PTSD symptoms or diagnosis, other co-occurring disorders were common

Table 5.1 Psychosocial Studies of Childhood Posttraumatic Stress Disorder

Study Citation(s)	Study Design/Description	Target Population	Demographic Characteristics	Outcomes	Notes
Goenjian, et al, 1997	Quasi-experimental design; assessed individual and group trauma/grief focused psychotherapy over six weeks among adolescents with PTSD who were victims of the 1988 earthquake in Armenia; students in two schools (<i>n</i> = 35) received psychotherapy <i>vs.</i> students at two other schools (<i>n</i> = 29) who did not	Students identified with posttraumatic stress and depressive reactions one and a half years following an earthquake	Age: 11 – 13 Gender: 60% boys 40% girls Race/Ethnicity: 100% Armenian	Three years after the earthquake, students who received the intervention reported reduced severity of PTSD and depressive symptoms; those not receiving psychotherapy reported increased severity of PTSD and depressive symptoms; at baseline the rate of PTSD in the index group was 60% and 52% for controls; at follow-up, rates were 28% and 69% respectively	Although small sample size, the direction of the findings for both groups underscore the importance of this brief intervention
March, Amaya-Jackson, Murray, & Schulte, 1998	Single case series across settings design; 18 session group- administered cognitive behavioral psychotherapy (<i>n</i> = 14)	Children in two elementary and junior high schools meeting criteria for a diagnosis of PTSD and considered suitable for treatment	Age: 10 – 15 Gender: 33% boys 67% girls Race/Ethnicity: 49% African American 49% White 1% Asian 1% American Indian	Among treatment completers, 57% no longer met criteria for PTSD at treatment termination; 86% were free of PTSD at the 6-month follow-up; improvement also observed for depression, anxiety and anger symptoms	An initial efficacy study; children with chronic abuse-related PTSD were excluded because family and other relevant interventions not included; conducting a randomized clinical trial may be the next step for this intervention

References

Studies of Childhood Posttraumatic Stress Disorder

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